

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application.

Claims 1-20 are pending in the application. Claims 1, 8 and 16 are independent.

Claim 3 is amended to correct a minor informality. Claims 16-20 are added.

Reconsideration of this application, as amended, is respectfully requested.

Reasons for Entry of Amendments

At the outset, it is respectfully requested that this Amendment be entered into the Official File in view of the fact that the amendments to the claims automatically place the application in condition for allowance.

In the alternative, if the Examiner does not agree that this application is in condition for allowance, it is respectfully requested that this Amendment be entered for the purpose of appeal. This Amendment reduces the issues on appeal by correcting a minor informality in claim 3 and by adding claims 16-20, which are narrower recitations of the limitations in claims 1-5. It is respectfully submitted that the addition of claims 16-20 does not require further search. This Amendment was not presented at an earlier date in view of the fact that Applicants did not fully appreciate the Examiner's position until the Final Office Action was reviewed.

Drawings

It is respectfully submitted that the drawings comply with U.S.P.T.O. requirements. Accordingly, a form PTO-948, indicating the drawings have been approved by the Official Draftsperson, is respectfully requested.

Claim Rejection under 35 U.S.C. 103(a)

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants admitted prior art (APA) in view of U.S. patent 6,078,365 to Ueda et al. This rejection is respectfully traversed.

Independent claim 1 recites a combination of elements in a liquid crystal display device, including “a first metal layer on the second semiconductor layer, the first metal layer patterned in a same pattern as the second semiconductor layer such that the first metal layer and second semiconductor layer define the separation region.”

Independent claim 8 recites a combination of steps in a method of forming of a liquid crystal display device, including “patterning the first metal layer and the second semiconductor layer in a same pattern.”

It is respectfully submitted that the combinations of elements and steps recited in independent claims 1 and 8 are not disclosed or made obvious by the applied prior art of record including the APA and Ueda et al.

The Office Action dated March 23, 2004 maintains the same rejection and opinions as those in the Office Action dated October 9, 2003. Namely, the Office Action equates the semiconductor layer 17 in FIG. 3C of the APA with the claimed “second semiconductor layer” in the present invention. The Office Action also equates the source and drain electrodes 5 and 7 in the APA with the claimed “first metal layer” in the present invention. The Office Action goes on to assert that the first metal layer (the source and drain electrodes 5 and 7) is patterned in the same pattern as the second semiconductor layer (the semiconductor layer 17), but does not provide evidence in support of this assertion.

As explained in the Amendment dated January 9, 2004, the source and drain electrodes 5 and 7 in the APA extend down the side walls of the semiconductor layer 15 as well as on a portion of an insulating film 9. In addition, the source and drain electrodes 5 and 7 are each patterned to form three side walls and three levels. The semiconductor layer 17 is only formed on a portion of the upper surface of the semiconductor layer 15. Unlike the source and drain electrodes 5 and 7, the semiconductor layer 17 does not extend down the side walls of the semiconductor layer 15 and along the insulating film 9. Also unlike the drain electrodes 5 and 7, the semiconductor layer 17 is not patterned to form three side walls and three levels, but one side wall and two levels. Thus, Fig. 3C of the present invention does not show that semiconductor layer 17 and the source and drain electrodes 5 and 7 are formed in the same pattern, as

asserted in the Office Action. Therefore, the APA does not teach or suggest “a first metal layer on the second semiconductor layer, the first metal layer patterned in a same pattern as the second semiconductor layer such that the first metal layer and second semiconductor layer define the separation region,” as recited in claim 1. Likewise, the APA does not teach or suggest “patterning the first metal layer and the second semiconductor layer in a same pattern,” as recited in claim 8.

The Office Action relies on Ueda et al. for a teaching of the source and drain being comprised of a combination of aluminum and molybdenum. Ueda et al. discloses depositing first and second semiconductor layers 77 and 78 on a gate insulating film 76, depositing a metal film 79 and a resist pattern 80 thereon and patterning them, and etching the first and second semiconductor layers 77 and 78 and the gate insulating film 76 using the patterned resist pattern 80 and the metal film 79, as shown in FIGS. 15A to 15F. Moreover, Ueda et al. teaches that the metal film 79 has a Mo/Al/Mo structure. However, Ueda et al. does not teach that a metal layer is formed on a second semiconductor layer, where both of these layers are formed in the same pattern, as required by the present invention. Therefore, Ueda et al. does not teach or suggest the above cited limitations of claims 1 and 8, and therefore fails to cure the deficiencies of the APA with respect to claims 1 and 8.

The Examiner has failed to establish a *prima facie* case of obviousness, based on the all three of the required basic criteria of:

1. There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify the references;
2. There must be a reasonable expectation of success; and
3. The prior art must teach or suggest all of the claimed limitations.

In view of the forgoing, it is respectfully submitted that the applied prior art of record, including the APA and Ueda et al. fail to teach or suggest the combination of elements and steps set forth in independent claims 1 and 8. It is believed that independent claims 1 and 8 are allowable. Since the remaining claims depend from these allowable independent claims, they are also allowable for at least the above reasons, as well as for the additional limitations provided thereby. Thus, all claims are allowable and reconsideration and withdrawal of the rejection under 35 U.S.C. 103(a) are respectfully requested.

Added Claims

Claims 16-20 have been added for the Examiner's consideration.

Independent claim 16 recites a combination of elements in a liquid crystal display device, including "a first metal layer on the ohmic contact layer, the first metal layer patterned in a same pattern as the ohmic contact layer such that the first metal layer and the ohmic contact layer define the separation region." Applicants respectfully submit that this combination of elements as set forth in

independent claim 16 is not disclosed or made obvious by the applied prior art of record.

Applicants respectfully submit that claims 17-20 depend from independent claim 16, and are therefore allowable based on their dependence from claim 16 which is believed to be allowable.

In addition, claims 17-20 recite further limitations which are not disclosed or made obvious by the applied prior art references.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact James T. Eller, Jr. (Reg. No. 39,538) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Application No.: 10/028,305
Art Unit 2871

Attorney Docket No. 2658-0283P
Amendment filed June 23, 2004
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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By 

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